



The total transit boardings in the region in 2006 reached 737 million, a record high since 1990.

Transportation

Journey to Work: Mode Choices

Why is this important?

Single-occupant vehicle use accounts for the highest level of land consumption among all transportation modes. It also generates the highest level of environmental, economic and social impacts. Increasing the use of alternative modes to work (e.g., carpool, transit, etc.) is critical to accommodate future growth with less environmental, economic and social impacts.

How are we doing?

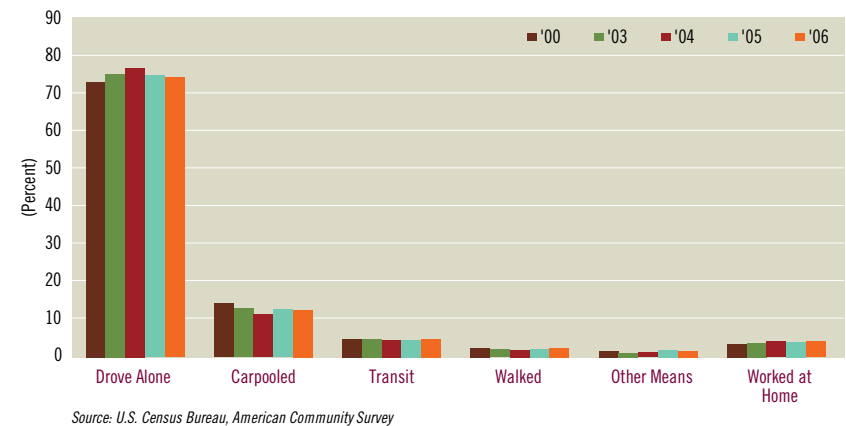
Between 2004 and 2006, the share of drive-alone commuting in the region decreased for two consecutive years from 76.7 percent to 74.1 percent, a 2.6 percent drop reversing the trend of steady increases between 2000 and 2004 (Figure 58). During the same period, the share of alternative



modes for commuting increased from 23.3 percent to 25.9 percent, reversing the trend of a steady decline between 2000 and 2004. Alternative modes encompass all modes except drive alone, including, for example, carpool, transit, walking, biking and work at home. This was similar to the trend at the national level though the magnitude of decrease in drive-alone share was larger in the SCAG region (Figure 59). The sharp rise of gasoline prices seemed to contribute to these reversals in the region and the rest of the nation (as further discussed in the Highway Use and Congestion Section below).

Figure 58

Mode Choice to Work (Workers 16 Years and Over)

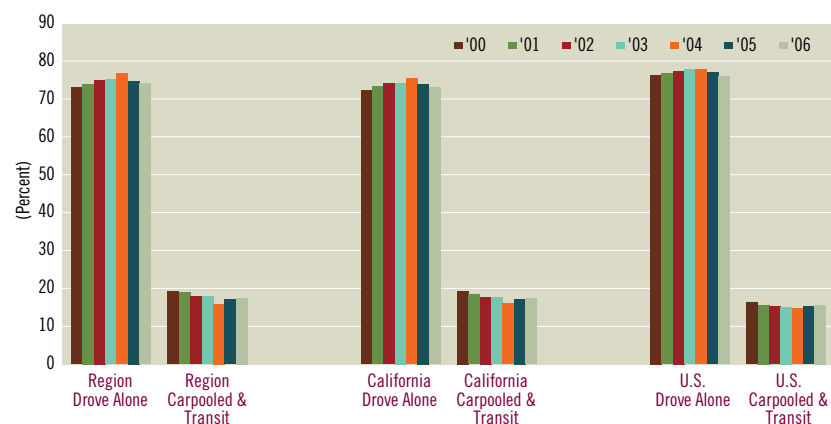


It should be noted that the region's carpool share of commuting, though rising from 11.4 percent to 12.6 percent between 2004 and 2006, was still well below the 2000 level at 14.3 percent. *Nevertheless, among the nine largest metropolitan regions in 2006, the SCAG region continued to achieve the highest share (12.6 percent) of workers who car-pooled to work followed by the Dallas region (12 percent).*¹ The SCAG region has had the highest carpool share since 1990. Among those who

carpooled, most (close to 80 percent) were in a 2-person carpool, and the remaining 20 percent were in 3-or-more-person carpools.

Figure 59

Mode Choice to Work - Drive Alone, Carpool, and Transit
(Workers 16 Years and Over)



Source: U.S. Census Bureau, American Community Survey

Within the region, carpool share of commuting increased in every county between 2004 and 2006. The Inland Empire led the region in carpool share in 2006 with Riverside County achieving the highest at 16.7 percent (a 2.6 percent increase from 2004) and San Bernardino at 14.2 percent.² In 2006, the SCAG region maintained the most extensive High-Occupancy Vehicle Lane (HOV) system, accounting for more than 20 percent of the total HOV lane miles in the nation.

Between 2004 and 2006, the transit share of commuting in the region increased from 4.5 percent to 4.9 percent, the highest since 2000. In addition, 4.2 percent of workers in the region worked at home instead of commuting to a workplace, though about the same as in 2004 also the highest since 2000.

Journey to Work: Travel Time

Why is this important?

Though the share of work trips among total trips has been declining, work trips continue to generate disproportionately higher impacts on the regional transportation system. Work trips tend to take longer than other daily trips. In addition, commute hours are generally the period with the most traffic congestion. Accordingly, transportation investments are still influenced significantly by the nature of work trips. Finally, the choice of residential location is partly determined by the location of work and the associated journey to work.

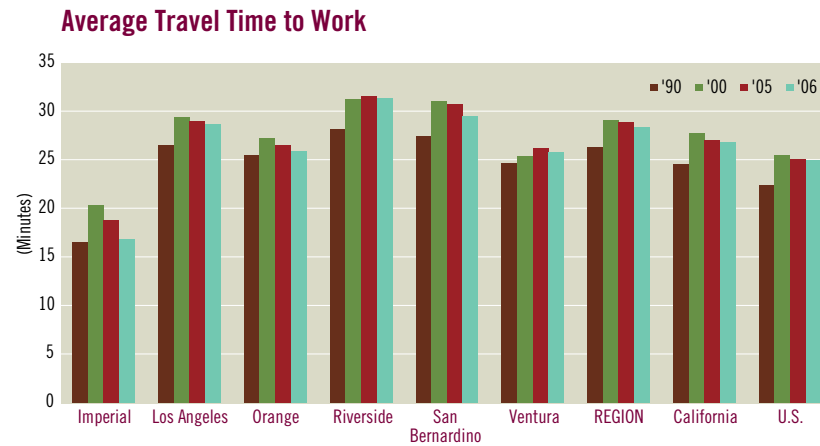
How are we doing?

Between 2005 and 2006, average travel time to work in the region declined very slightly from 28.9 minutes to 28.4 minutes though it continued to be higher than the state (27 minutes) and national (25 minutes) averages. Within the region, average travel time fell slightly in every county. In 2006, workers in Riverside County continued to have the highest average travel time to work in the region at 31 minutes followed



by San Bernardino County just below 30 minutes, while Imperial had the lowest at 17 minutes (Figure 60).

Figure 60



Source: U.S. Census Bureau, 2000 Census, 2005 and 2006 American Community Survey

Transit Use and Performance

Why is this important?

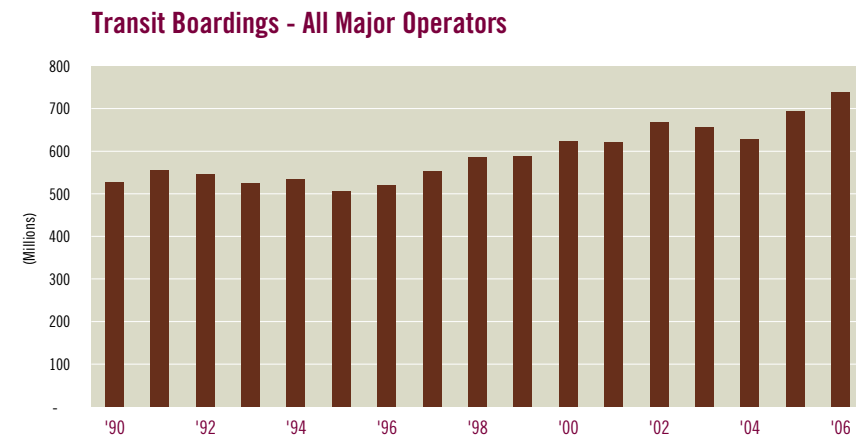
Use of public transit helps to improve congestion and air quality and decrease energy consumption. Reliable and safe transit services are essential for many residents to participate in economic, social and cultural life in Southern California. Annual transit boardings measures transit use at the system level, while transit trips per capita provides a measure of transit use at the individual level.

How are we doing?

Total transit boardings in the region in FY 2006 (from July 2005 to June 2006) increased by 44 million (6 percent) to a record high of 737 million since 1990 (Figure 61). This was primarily due to the continuing growth

of the Los Angeles County Metro transit system ridership. It was also facilitated by the surge in gasoline prices that resulted in some shift from private auto to transit use. The Metro system accounts for about two-thirds of the regional total in transit boardings. During FY 2006, the Metro transit system (including bus and rail) achieved an increase of 38 million (7 percent) to reach total boardings of 493 million.

Figure 61

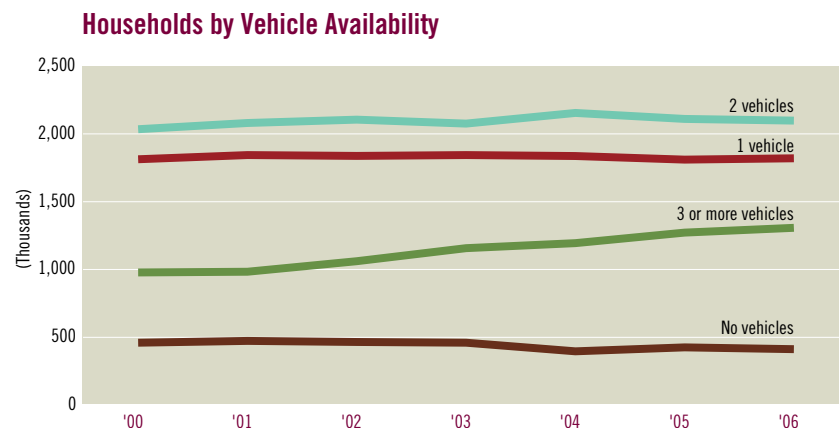


Source: National Transit Database and SCAG including preliminary estimates for 2006 data



The increase in transit boardings took place despite a reduction in the transit dependent households (i.e. households without a car) in the region. Between 2000 and 2006, the number of households without a car decreased from 459,859 (10.1 percent) to 411,824 (7.3 percent) (Figure 62 and 63). This is consistent with the trend at the state and national levels.

Figure 62

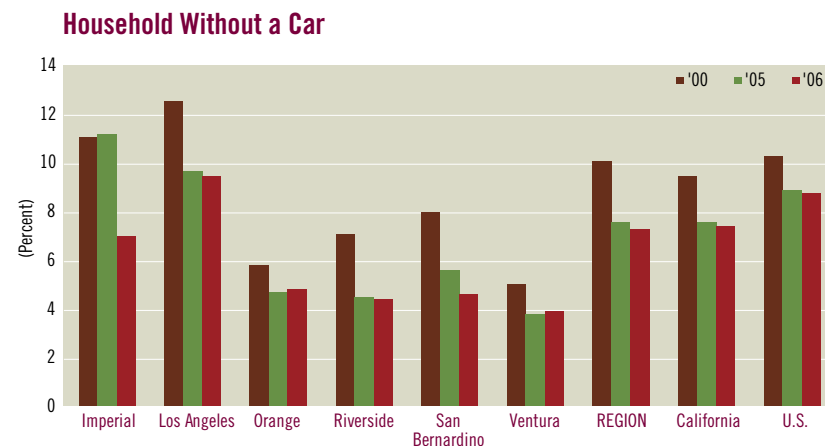


Source: U.S. Census Bureau, American Community Survey



Within the region, every county saw its share of transit dependent households decreasing from 2000 to 2006. Los Angeles County continued to have the highest share of households without a car at 9.5 percent while Ventura the lowest at only 3.9 percent.

Figure 63



Source: U.S. Census Bureau, 2000 Census, 2005 and 2006 American Community Survey

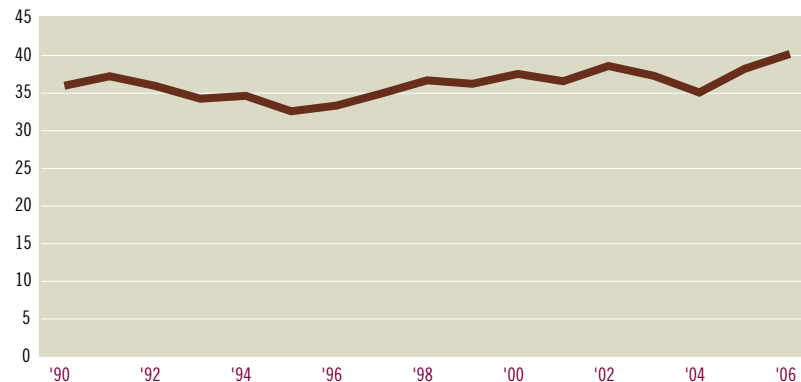
In addition to the Los Angeles County Metro system, a few other transit systems also experienced boarding increases. For example, total boardings of the Orange County Transportation Authority transit system rose from 66 to 69 million (4 percent) between FY 2005 and FY 2006. In addition, Metrolink also accomplished a 9 percent gain for the second consecutive year to reach 11.7 million boardings in 2006.

Between 2005 and 2006, since transit boardings in the region increased at a much faster rate than the population, transit trips per capita increased from 37 in FY 2005 to 40 in FY 2006, which was the highest since 1990 (Figure 64). Nevertheless, transit use accounted for only about 2 percent of all trips in the region. Major barriers to further transit system development and higher transit use include an

auto-oriented urban structure, inadequate level of service and a lack of geographic coverage (or insufficient destinations).³

Figure 64

Transit Boardings Per Capita



Source: California Department of Finance, National Transit Database

Highway Use and Congestion

Why is this important?

Highway congestion causes delays affecting personal mobility and goods movement and results in increased economic and social costs. In addition, congestion impacts the region's air quality. The number of vehicle miles traveled (VMT) indicates the overall level of highway and automobile usage, and is directly related to mobile source emissions.

How are we doing?

For at least the past two decades, Southern California has been consistently experiencing very high levels of congestion. Contributing factors include large population and physical extent of the region, rapid population growth, high automobile dependence, low levels of transit

usage, and a maturing regional highway system with limited options for expansion.

Larger metropolitan regions generally have higher levels of congestion than smaller metropolitan regions. The SCAG region has also consistently been growing faster than the rest of the nation. The dispersed development patterns with imbalanced jobs and housing in the region result in transit services less effective and continued reliance on private automobiles. Currently, less than two percent of the total person trips use transit. Among the nine largest metropolitan regions in the nation, Southern California had one of the highest dependence on automobiles despite of having the lowest per capita income. The region's highway system is a maturing system with limited options for expansion. This is particularly true for southern Los Angeles County and Orange County. For example, 95 percent of the Orange County's planned arterial network has already been built.⁴

As a major gateway for international trade, the region's highways carry some of the highest truck volumes and share some of the most congested bottlenecks for trucks in the nation.⁵ For example, I-710, which feeds trucks directly to and from the ports, and the I-605 and SR 91, carry as much as 40,000 trucks on an average weekday.

The SCAG region (particularly Los Angeles and Orange counties) regularly ranks as the most congested metropolitan region in the nation.⁶ Congestion level is measured by indicators such as travel time index or annual delay per traveler. For example, in 2005, a traveler in Los Angeles/Orange counties during the peak period spent 50 percent more time than if traveling at free-flow speed. At 1.5 in 2005, Los Angeles/Orange counties had the highest travel time index among the nation's metropolitan areas (Figure 65). The San Francisco Bay Area had the second highest at 1.41. Riverside/San Bernardino counties ranked 6th

highest with an index of 1.35 in 2005. Ventura County, with a travel time index of 1.24, ranked 27th among all metropolitan areas and second among medium-sized metropolitan areas. Nationally, congestion has grown in every metropolitan area regardless of size but has been most severe within the largest metropolitan areas.

Figure 65

Peak Period Travel Time Index*
(by Metropolitan Area)



* Travel time index is the ratio of peak period travel time to free flow travel time.
Source: Texas Transportation Institute

Though Los Angeles/Orange counties had the nation's highest congestion level, their travel time index increased little between 1995 and 2005, while other metropolitan areas generally experienced much larger increases in congestion levels. During this period, the travel time index in Los Angeles/Orange counties rose very slightly from 1.44 to 1.5, while it increased from 1.24 to 1.39 in New York and from 1.16 to 1.35 in Dallas. Significant investment in transit (e.g., the Red Line and light rails) and HOV system since 1990 contributed to the slower increase in congestion level in Los Angeles and Orange counties. The travel time index in Riverside/San Bernardino counties increased from 1.19 to 1.35 during the 10-year period.

In 2005, a traveler in Los Angeles/Orange counties during the peak period experienced a total delay of 72 hours, the highest among all metropolitan areas (see Figure 135 page 151). For Riverside/San Bernardino counties, the total delay for a peak period traveler was 49 hours, the 6th highest, and 39 hours for Ventura County. Close to half of the delay resulted from incidents. Total cost incurred due to congestion in the SCAG region was over \$10.5 billion in 2005, significantly higher than any other metropolitan region (see Figure 136 page 152).

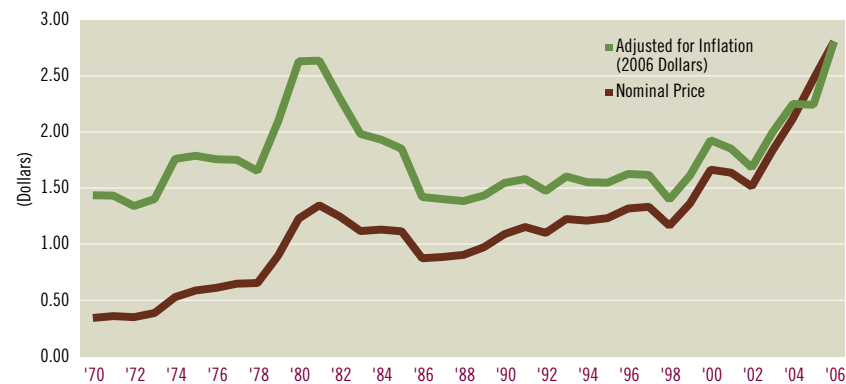
Gasoline price is an important factor influencing the amount of vehicle travel and the associated fuel consumption. Between 1970 and 2006, annual average gasoline (nominal) prices increased from 35 cents to \$2.80 per gallon (Figure 66). With inflation adjustment based on 2006



dollars, real gasoline prices doubled from \$1.40 to \$2.80 during the same period. During the 36-year period, real gasoline prices generally stayed below \$2 per gallon (and mostly fluctuated around \$1.50) with the exception of two periods: the last energy crisis in the late 1970s and early 1980s and the recent price run-up since 2002. Real gasoline prices were below \$1.70 per gallon in 2002 but have been increasing about 15 percent per year reaching \$2.8 in 2006. This surge continued into 2007 reaching a new high of \$3.20 (2007 dollars) per gallon in mid 2007 before declining somewhat to around \$2.90 per gallon in fall 2007. Gasoline price changes are correlated with the world prices of crude oil, because crude oil represents a large percentage of the final price of gasoline.

Figure 66

California Gasoline Prices per Gallon, 1970-2006
(Annual Average)



Source: California Energy Commission

An average gasoline price at \$2.80 in 2006 was the highest between 1970 and 2006 and began to have some impacts on the commuters' mode choices and total vehicle miles traveled. From 2004 to 2006, there was a notable decline in the region's drive-alone commuting from 76.7 percent to

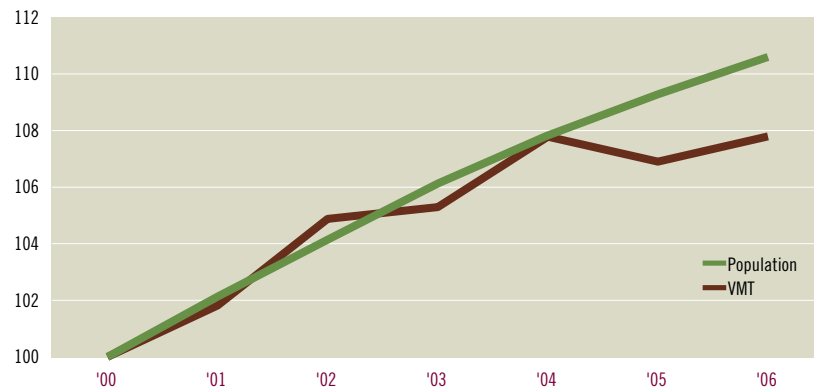
74.1 percent, reversing the trend of a steady increase between 2000 and 2004. During the same period, the share of alternative modes for commuting increased from 23.3 percent to 25.9 percent, reversing the trend of a steady decline.

In addition, between 2005 and 2006, total VMT grew slightly about 0.8 percent, lower than either the population growth (1.2 percent) or job growth (2.2 percent)(Figure 67). Total VMT in 2006 was about the same level as in 2004. It should be noted that historically, the rate of VMT growth was much higher than that of population growth. Finally, VMT per household in the region actually declined for two consecutive years between 2004 and 2006 (Figure 68).



Figure 67

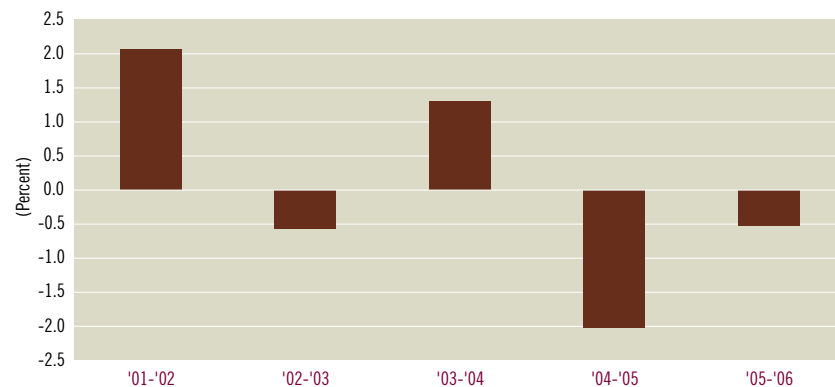
Growth of Vehicle Miles Traveled (VMT) vs. Population
(2000 as the Base Year = 100)



Source: California Department of Transportation

Figure 68

Vehicle Miles Traveled (VMT) per Household
(Percent Change)



Source: California Department of Finance and Department of Transportation

Impacts of Truck Through-Traffic on Congestion in the Region

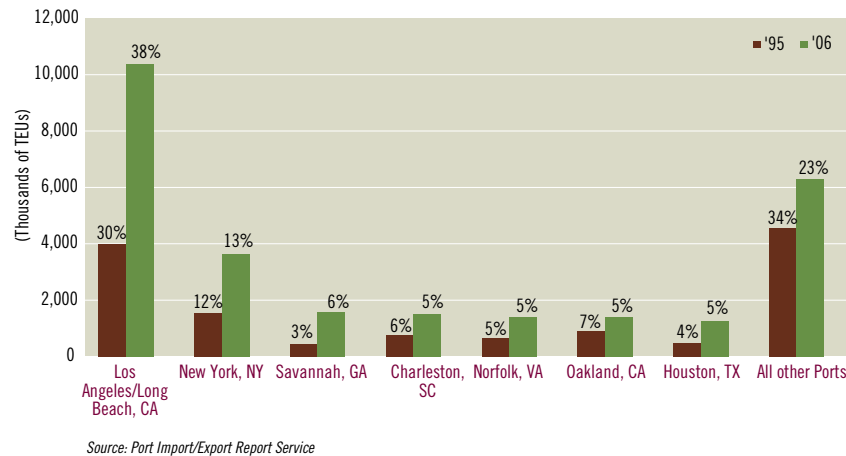
The SCAG region has the largest container port complex in the nation. During the past 10 years, the San Pedro Ports of Long Beach/Los Angeles have further increased their dominance. Port-related international container traffic has achieved double-digit growth yearly for more than a decade. Between 1995 and 2006, total number of international



(loaded) container traffic at the twin ports increased from about 4 million to 10.4 million TEUs (twenty-foot equivalent unit), the highest in the nation. The share of the region's container traffic also expanded from 30 percent to 38 percent of the national total during the same period. Ports of New York and Savannah (Georgia) ranked second and third, with only 13 percent and 6 percent share respectively in 2006 (Figure 69).

Figure 69

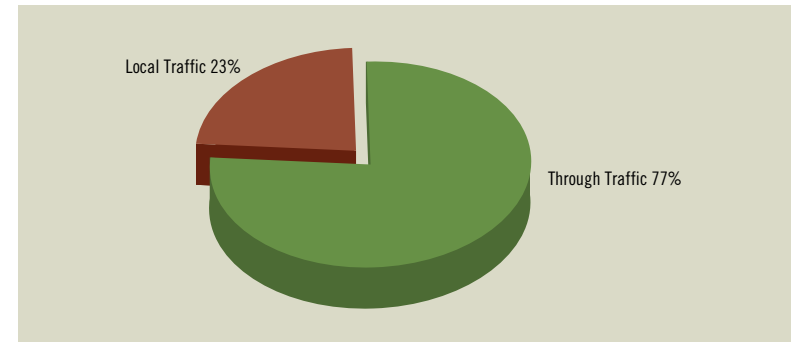
Port International (Loaded) Container Traffic
(Thousands of TEUs and Share of the National Total)



Among the port container-related freight traffic in the region, about 77 percent were estimated to be through traffic, i.e. with final destinations outside the region (Figure 70).⁷ Among the metropolitan areas in the nation, the SCAG region ranked first in terms of the value of outbound shipments originating within a metropolitan region.⁸ The Chicago region ranked second but with only 60 percent of the value of outbound shipments when compared to the SCAG region.

Figure 70

Port Container-Related Freight Traffic in the SCAG Region



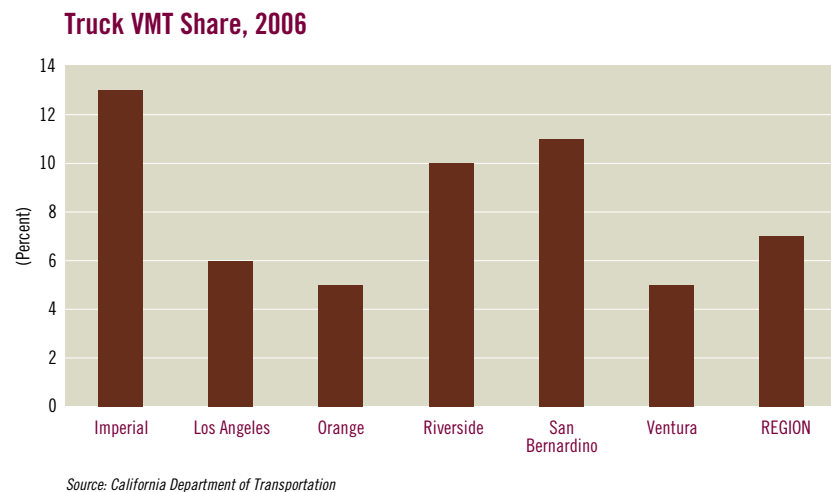
Source: Estimates based on the Draft Multi-County Goods Movement Action Plan

In 2006, truck traffic accounted for 7 percent of the total VMT in the region. However, truck VMT share varied among counties (Figure 71). Specifically, the three inland counties had significantly higher truck VMT share than the coastal counties, ranging from 10 percent



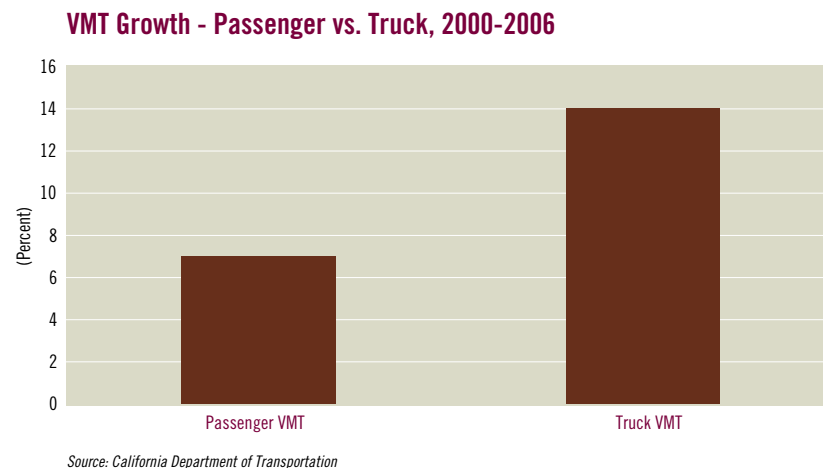
in Riverside County to 13 percent in Imperial County. For the three coastal counties, truck VMT shares were between 5 and 6 percent. Trucks are much larger, heavier and accelerate more slowly than passenger vehicles, and thus have much greater impacts on traffic flows than passenger vehicles. On a flat terrain, a heavy duty truck could be equivalent to 2.5 passenger vehicles in its impact on the capacity. As trucks travel up a grade, their speeds decrease and impacts on congestion become even more severe. *Consequently, the truck VMT share statistics underestimate their actual impacts on traffic congestion in the region.*

Figure 71



Due to the significant increase in international trade, truck VMT has also been growing at a much faster rate than passenger VMT. Between 2000 and 2006, truck VMT grew 14 percent, doubling the rate of passenger VMT growth at 7 percent (Figure 72). By 2035, total truck VMT in the region are estimated to almost double the current level.

Figure 72



Though two-thirds of the truck VMT take place during the off-peak period, there are various freeway segments in the region that carry heavy truck volumes during the peak periods (i.e., from 6 to 9 a.m. and 4 to 7 p.m.). Due to the location of the San Pedro port complex, those segments are located in the central part of the regional transportation system, and tend to generate disproportionate impacts than otherwise. For example, the I-710, SR-60, and I-15 freeways are heavily impacted by trucks now and will become even more congested in the future. The SR-60 Corridor between I-710 and I-15 is one of the most heavily used freeways by trucks engaged in inter- and intra-regional goods movement, serving both port and domestic traffic. I-15 is the primary freight corridor between Los Angeles and the states to the north and east.⁹

In the region, the most significant goods movement patterns are east-west within Los Angeles County. The spin-off patterns include, for example, travel to and through Riverside and San Bernardino counties and other points eastward. The second most significant goods move-

ment patterns are north-south within Los Angeles County between the ports and intermodal yards and warehouse distribution centers.¹⁰

Highway Fatalities

Why is it important?

Highway accidents are the leading cause of death for people between the ages of 4 and 33.¹¹ Highway fatalities at 42,642 deaths in 2006 nationally accounted for about 95 percent of transportation-related deaths. Highway accidents and other incidents also accounted for more than 40 percent of the total annual delay of the region's highway system.

How are we doing?

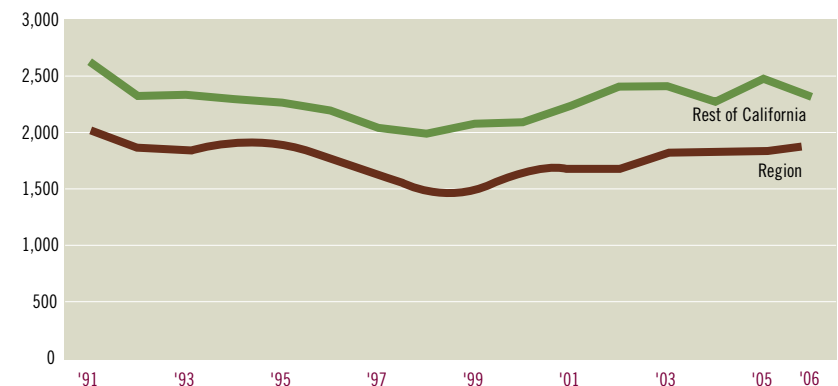
In 2006, motor vehicle crashes in the region resulted in 1,881 fatalities (about 5 deaths per day), a slight increase (3 percent) from 2005



(Figure 73). For the rest of California, total number of highway fatalities of 2,316 in 2006 represented a 6 percent reduction from 2005. At the national level, total number of highway fatalities fell slightly from 43,200 deaths in 2005 to 42,642 deaths in 2006, about a 1.3 percent decrease.¹²

Figure 73

Highway Accident Fatalities

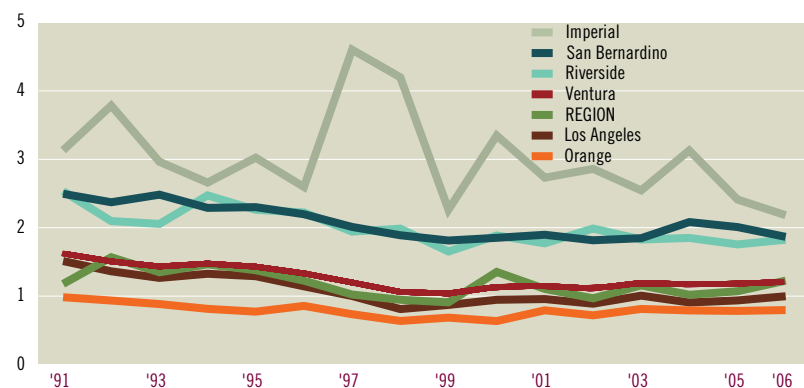


Source: California Highway Patrol with 2006 preliminary data

Within the region, Imperial County reduced its highway fatality rate noticeably in 2006. Between 2005 and 2006, highway fatality rate also decreased in San Bernardino County while the remaining four counties experienced slight increases (Figure 74). In 2006, the region's highway accident fatality rate at 1.21 persons per 100 million vehicle miles traveled was higher than the national average for urban areas (0.94 persons per 100 million vehicle miles traveled). The highway fatality rate in the region in 2006, though about the same as in 2005, was the highest since reaching its lowest level in 1998. However, the fatality rate in 2006 was about 25 percent below the 1991 level (1.62 persons per 100 million vehicle miles).

Figure 74

Highway Accident Fatalities
(Per 100 Million Vehicle Miles Traveled)



Source: California Highway Patrol with 2006 preliminary data and California Department of Transportation

Airports

Why is this important?

Air transportation is vitally important to the regional economy of Southern California. Because of its geographical location, Southern California relies heavily on air transportation services to access and interconnect with domestic and foreign markets. For example, airborne exports accounted for almost 46 percent of the total value of commodity exports out of the Los Angeles Customs District (LACD) in 2006.¹³ Adequate aviation capacity and quality services are essential to the tourism, business, and trade sectors of the regional economy.

How are we doing?

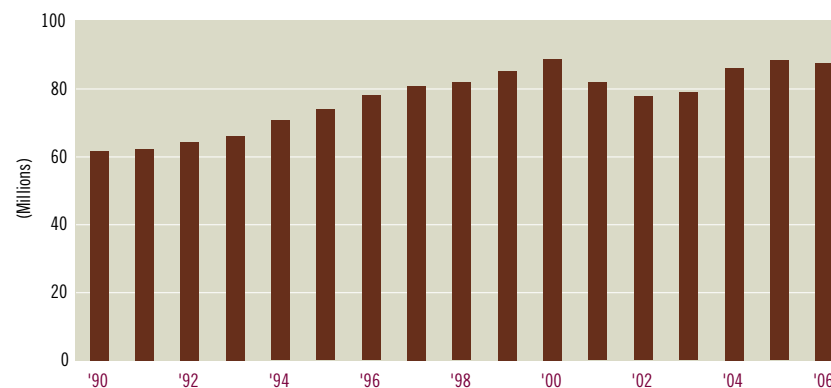
Total air passengers in the region in 2006 experienced a very slight decrease of 0.6 million (0.7 percent) reaching 87.7 million. This was the first decline since 2002. Contributing factors included higher air fares

due to a sharp rise in fuel prices as well as reductions in the number of flights. Total air passengers in 2006 was still somewhat below the 2000 (pre-September 11) record level of 89 million (Figure 75).

Among the 87.7 million passengers, about 70.6 million (or 80 percent) were domestic while 17.1 million (or 20 percent) were international. At Los Angeles International (LAX), the share of international passenger traffic has been increasing from 25.8 percent in 2000 to 27.7 percent in 2006.

Figure 75

Air Passenger Traffic at Major Regional Airports

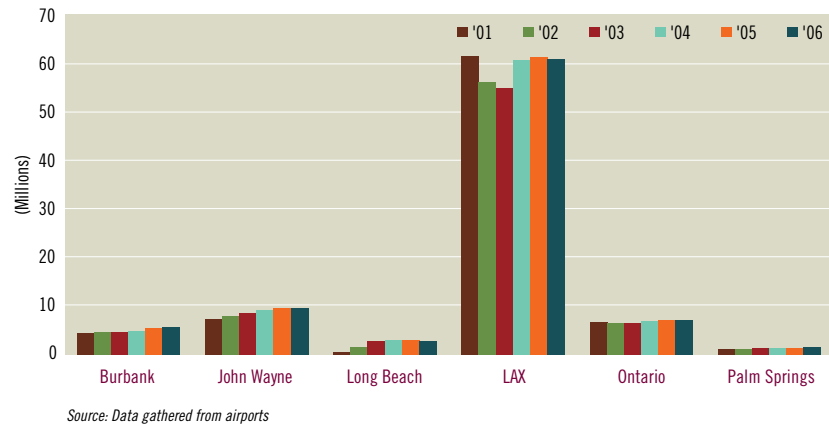


Source: Data gathered from airports

Within in the region, almost every major airport maintained the same passenger level in 2006 as in 2005 except Long Beach which experienced a 9-percent loss (Figure 76). Between 2000 and 2006, the share of LAX in total air passengers in the region decreased from 76 percent to just below 70 percent.

Figure 76

Air Passenger Traffic by Airport



Total air cargo in the region's airports reached over 2.8 million tons in 2006, a very slight decline (1.5 percent) from the 2005 level and was still a little below the 2000 record level (Figure 77). Between 1970 and 2000, air cargo in the region grew at a rate of 5.4 percent annually. About three-quarters of the region's air cargo traffic went through LAX while close to 20 percent passed through the Ontario International Airport. Ontario Airport is the west coast hub of all UPS air cargo operations and is also a major distribution center for FedEx. The remaining

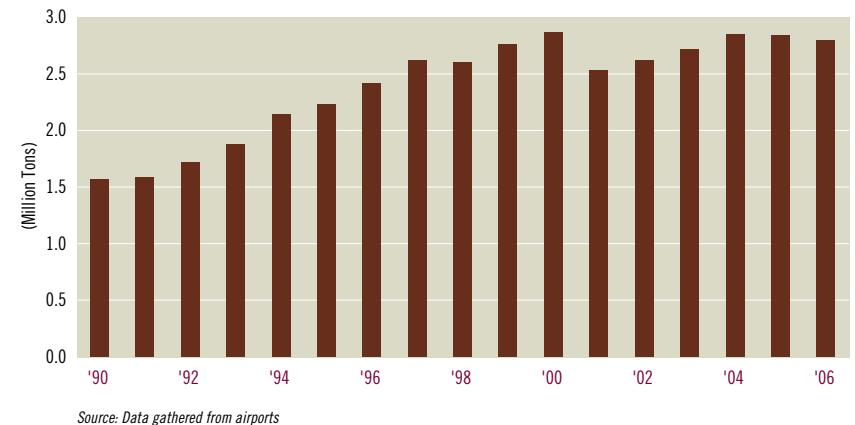


5 percent was spread among four other airports: Bob Hope (Burbank), Long Beach, John Wayne and Palmdale.

LAX was the nation's second busiest international air freight gateway by value of shipment behind only John F. Kennedy Airport in New York. The major markets for freight moving through LAX are South Korea, Japan, and Taiwan. Some of the major commodities exported through LAX are vegetables, fruits, and nuts; clothing; computer equipment; and medical equipment, while the leading imports are apparel, computer equipment, audio and video media, and office machinery.¹⁴ LAX is one of only three major freight gateways in the nation that handles more exports than imports in value terms. By 2030, total air cargo in the region is projected to reach 8.7 million tons, more than triple its 2006 level.¹⁵

Figure 77

Air Cargo in the Region's Six Largest Airports



In 2006, among the ten largest airports in the world, LAX ranked 5th in passenger traffic, behind Atlanta, Chicago, London and Tokyo (see Figure 137 page 152). LAX also ranked 10th in total cargo volumes in



2006, surpassed by Shanghai, Louisville and Singapore since 2005 (see Figure 138 page 152).

Ports

Why is this important?

Almost 85 percent of the imports coming through the Los Angeles Customs District (LACD) arrive at the region's ports.¹⁶ Continuing to provide a world-class port infrastructure is critical to sustaining a growing and prosperous regional economy.

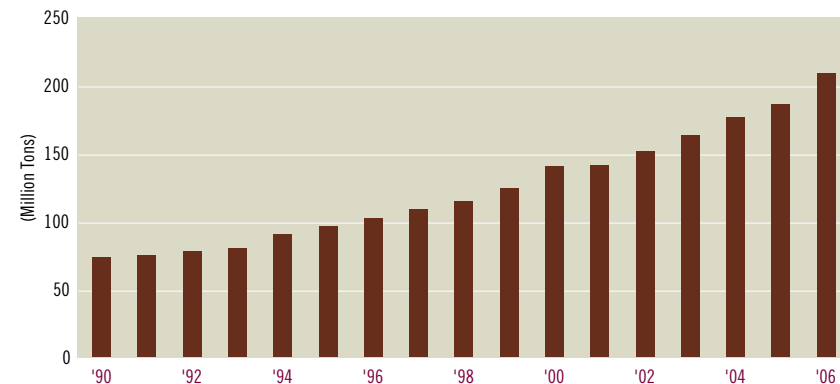
How are we doing?

Total traffic at the Ports of Los Angeles and Long Beach increased from 187 million tons in 2005 to 210.4 million tons in 2006, a 12.5 percent increase, higher than the 5.2 percent increase during the previous period (Figure 78). *In 2006, the Los Angeles/Long Beach port complex*

ranked fifth in the world in container traffic (15.8 million TEUs handled including empty containers) following Singapore (24.8 million), Hong Kong (23.2 million), Shanghai (21.7 million) and Shenzhen, China (18.5 million).¹⁷ By 2020, total container traffic at the twin-ports is projected to more than double their 2006 level, reaching 36 million TEUs.¹⁸ In 2006, the twin-ports also maintained their dominant role among West Coast ports, attracting 58.3 percent of the total traffic.

Figure 78

Port Cargo at Los Angeles and Long Beach



Source: Los Angeles Economic Development Corporation

Activities at the ports have been identified as the largest source of air pollution in the region, a condition that will increase over time as port traffic increases. Port-related pollution has posed serious public health impacts on local communities and the entire South Coast Air Basin. For instance, a substantial contributor to air pollution is the low-grade diesel fuel used by ships. In December 2005, the California Air Resources Board (ARB) instituted a requirement for the use of higher-grade, less polluting diesel fuel within 24 miles of the California coast. In November 2006, the governing boards of the Ports of Los Angeles and Long Beach approved the \$2 billion Clean Air Action Plan. The

plan aims to reduce port-related pollution from vessels, trains, trucks, and terminal operating equipment by 45 percent over the next 5 years by requiring, among other measures, the use of electric shore power and clean fuels and accelerating the conversion to a cleaner truck fleet.

Between 2005 and 2006, traffic at Port Hueneme decreased very slightly by 0.7 percent, from 4.6 to 4.57 million tons, following a 14 percent increase during the previous period. Only about 8 percent of the cargo shipments at Port Hueneme were through containers. Handling about 220,000 metric tons of automobiles, the port is one of the load centers for the import and export of automobiles.